

We claim:

1. A freeze dried pharmaceutical formulation comprising a porphyrin photosensitizer, a disaccharide or polysaccharide, and one or more phospholipids which formulation, upon addition of a suitable aqueous vehicle, forms liposomes containing a therapeutically acceptable amount of said porphyrin photosensitizer.

2. A pharmaceutical liposomal formulation formed upon addition of a suitable aqueous vehicle to the freeze-dried formulation according to claim 1.

3. A pharmaceutical formulation according to claim 1 wherein said formulation comprises a porphyrin photosensitizer, a disaccharide or polysaccharide, a phosphatidyl choline and a phosphatidyl glycerol.

4. A pharmaceutical formulation according to claim 1 or 3 wherein said disaccharide or polysaccharide is selected from lactose or trehalose.

5. A pharmaceutical formulation according to claims 1, 3 or 4 wherein the concentration ratio of disaccharide or polysaccharide to phospholipid is about 10-20 to 0.5-6.

6. A pharmaceutical formulation of claims 1, 2, 3, 4 or 5 wherein said porphyrin photosensitizer is a hydro-monobenzoporphyrin (Gp) of the formulae set forth in Figure 1 having a light absorption maximum between 670-780 nm; and mixtures thereof and the metalated and labeled forms thereof,

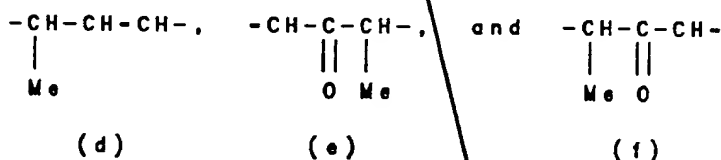
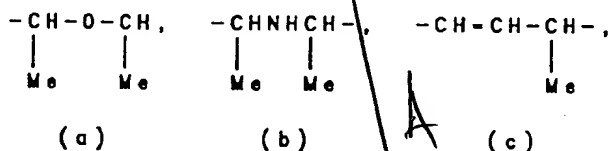
wherein each R^1 and R^2 is independently selected from the group consisting of carbalkoxy (2-6C), alkyl (1-6C) sulfonyl, aryl (6-10C) sulfonyl, aryl (6-10C); cyano; and $-CONR^5CO-$ wherein R^5 is aryl (6-10C) or alkyl (1-6C);

each R^3 is independently carboxyalkyl (2-6C) or a salt, amide, ester or acylhydrazone thereof, or is alkyl (1-6C); and

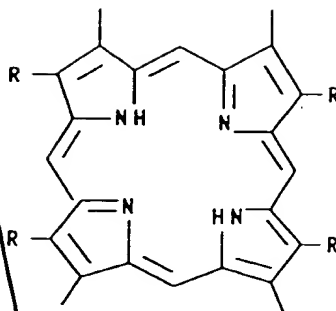
R^4 is $CHCH_2$, $CHOR^{4'}$, $-CHO$, $-COOR^{4'}$, $CH(OR^{4'})CH_3$, $CH(OR^{4'})CH_2OR^{4'}$, $-CH(SR^{4'})CH_3$, $-CH(NR^{4'})CH_3$, $-CH(CN)CH_3$, $-CH(COOR^{4'})CH_3$, $-CH(OOCR^{4'})CH_3$, $-CH(halo)CH_3$, or $-CH(halo)CH_2(halo)$, wherein $R^{4'}$ is H, alkyl (1-6C) optionally substituted with a hydrophilic substituent, or

wherein R^4 is an organic group of less than 12C resulting from direct or indirect derivatization of vinyl, or

wherein R^4 consists of 1-3 tetrapyrrole-type nuclei of the formula -L-P wherein -L- is selected from the group consisting of



and P is selected from the group consisting of Gp which is of the formula 1-6 but lacking R^4 and conjugated through the position shown as occupied by R^4 to L, and a porphyrin of the formula:



wherein each R is independently H or lower alkyl (1-4C);

wherein two of the bonds shown as unoccupied on adjacent rings are joined to R³ and one of the remaining bonds shown as unoccupied is joined to R⁴ and the other to L;

with the proviso that if R⁴ is CHCH₂, both R³ cannot be carbalkoxyethyl.

7. The formulation of claim 6 wherein each R³ is -CH₂CH₂COOH or salt, amide, ester or acylhydrazone thereof.

8. The formulation of claim 6 wherein each of R¹ and R² is carbalkoxy (2-6C).

9. The formulation of claim 7 wherein each of R¹ and R² is carbalkoxy (2-6C).

10. The formulation of claim 7 wherein the Gp has the formula 3 or 4 of Figure 2.

11. The formulation of claim 9 wherein the Gp has the formula 3 or 4 of Figure 2.

12. A pharmaceutical formulation according to claim 1 further containing an antioxidant.

13. A pharmaceutical formulation according to claim 1 in association with a pharmaceutically acceptable adjuvant or excipient.

14. The formulation of claims 1 or 2 wherein the therapeutically effective concentration of the

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